

Curriculum Vitae

Ashley Gerard Davies, Ph. D. Principal Scientist

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Citizenship UK, US

Current Position Research Scientist (V), JPL

Career

Jet Propulsion Laboratory, Pasadena, CA, USA (1996 – present)

- Principal Scientist, 2020
- 3223 Group Supervisor (interim) 2020
- Co-I, *Io Volcano Observer*, Discovery 2019 Finalist
- Research Scientist V, Planetary Geosciences (2018+)
- Co-I, *Europa Clipper* Mapping Imaging Spectrometer for Europa (MISE) (2015+)
- Research Scientist IV, Geophysics and Planetary Geosciences (2015+)
- Research Scientist IV, Comets, Asteroids and Satellites Group (2003 - 2014)
- New Millennium Program-Autonomous Sciencecraft Experiment (ASE) Co-I and Lead Scientist (2001 - present)
- ASTER Team Associate (2004 - present)
- Research Scientist III, *Galileo* NIMS Team (2001 - 2002)
- Scientist I, II, *Galileo* NIMS team (1996 - 2001)

National Research Council Resident Research Associate, NASA/JPL (1994 - 1996)

UK Meteorological Office: Higher Scientific Officer (1990 - 1994)

- Short-Range Forecast Division (Research Scientist) (1991 - 1994)
- Systems Programmer (ARTIFAX System) (1990 - 1991)

Expertise

- Planetary science: in particular, the jovian satellite Io and other volcanic worlds
- Remote sensing of volcanic activity
- Analysis of hyperspectral and multispectral data (*Galileo* NIMS and SSI; *EO-1* Hyperion and ALI, *Terra* ASTER and *Terra/Aqua* MODIS); and telescope observations of Io (Keck, Gemini, LBTI);
- Numerical and analytical modelling of volcanic processes on Io, Earth, Titan and Enceladus... across the Solar System and beyond.
- Autonomous spacecraft and sensor web operations
- Visible and Infrared wavelength technology and instrumentation development
- Science and mission concept maturation and development



Broad fieldwork experience: including Antarctica (Erebus), Ethiopia (Erta’Ale), Hawai’i (Kilauea and Mauna Loa), and Iceland (Eyjafjallajökull, Holuhraun).

Education

Undergraduate: Bachelor of Science degree with Honours in Combined Studies (Astronomy and Geology) from the University of Hertfordshire, UK, 1984.

Doctorate: Ph.D. in planetary volcanism from Lancaster University, UK, 1988. Prof. Lionel Wilson and Prof. Harry Pinkerton, advisors. Thesis: “Sulphur-Silicate Interactions on the Jovian Satellite, Io”.

National Research Council Post-Doctoral Research Associateship: 1994-1996 Jet Propulsion Laboratory, with Dr. Dennis Matson and Dr. Torrence V. Johnson, modelling ground-based observations of volcanic thermal emission from Io.

Leadership

- JPL interim Group Supervisor (3223) 2020
- Autonomous Sciencecraft Experiment Lead Scientist: 2001 – 2017
- Volcano Sensor Web Lead Scientist: 2004 – present
- JIMO Mission Study Science Lead (single-spacecraft option): 2003
- P.I. on multiple successful NASA-funded investigations (see below)

Spacecraft missions and technology development

- *Europa Clipper* Mapping Imaging Spectrometer for Europa (MISE), selected in May 2015 to explore Europa and other bodies in the jovian system. (2015+)
- *Non-saturating, simultaneous multiband, infrared imager* (incorporating HOT-BIRD detector) – instrument under development under NASA’s PICASSO program (2017-2020). P.I. Alex Soibel, JPL. Co-I and Science Lead: Ashley Davies.
- *Galileo* Near Infrared Mapping Spectrometer (NIMS) Team Member – Quantifying volcanic processes on Io; modelling volcanic processes. (1996-2002)
- *Earth Observing 1* Autonomous Sciencecraft Experiment (ST-6) Lead Scientist – increasing mission science return through use of autonomy. (2004-)
- Volcano Sensor Web – Lead Scientist – a world-spanning eruption alert system using eruption alerts to generate spacecraft observations: a fully-autonomous system. (2005-)
- *Terra* ASTER - Associate Team Member - Data mining the ASTER Volcano Archive. (2008-). ASTER Volcano Archive Manager (2019-).
- *Io Volcano Observer* (IVO): Co-I on Discovery 2019 proposal (P.I. A.S. McEwen, U. Arizona). Discovery 2019 finalist – final selection decision due mid-2021.

Research awards (as P.I. – as Co-I not shown)

- NASA New Frontiers Data Analysis Program (2021)
- NASA Solar System Workings (2018)
- NASA Planetary Data Analysis, Restoration and Tools (awards in 2017, 2018, 2021)
- NASA Planetary Geology & Geophysics Program: 2001-2017 (multiple awards)
- NASA Outer Planets Research Program: 2002-2018 (multiple awards)
- NASA Jupiter Data Analysis Program: 2000-2003
- NASA Advanced Information Science and Technology Program: (\$500K) 2005
- JPL Research and Technology Development Program, P.I.: 2003-2006 (multiple awards)
- JPL Spontaneous Concept Awards (multiple awards, 2012-2018)

Professional Societies

Fellow, Royal Astronomical Society
Member, Royal Astronomical Society Joint Association for Geophysics
Member, American Geophysical Union
Member, Division of Planetary Science, American Astronomical Society
Member, International Association for Volcanism and the Chemistry of the Earth's Interior
Member, International Astronomical Union (IAU Commission 16)
Member, Geological Society of America

Awards

2020: JPL *Voyager* Award (for management of Group 3223)
2011: NASA Software of the Year: Honourable mention: "Sensor Web Toolbox"
2007: NASA Space Act Award: "Autonomous Volcano Sensor Web"
2005: **NASA Software of the Year Award Winner** "Autonomous Sciencecraft Experiment".
2005: NASA Group Achievement Award to the Autonomous Sciencecraft Experiment Team.
2003: Technically Significant Technology Award: "Software for the *Techsat-21* Autonomous Sciencecraft Experiment (ASE)".
2003: JPL Team Bonus Award: "*Jupiter Icy Moon Orbiter (JIMO)* Studies".
1998: NASA Group Achievement Award to the *Galileo* Project Team.
1997: NASA Group Achievement Award to the *Galileo* Orbital Operations Recovery Team.
1994: National Research Council Postdoctoral Fellowship (1994-1996)

New Technology Reports and Technical Brief Awards

(C= Computer Program. H = Hardware)

50996 Europa Spectral Anomaly Simulation Framework for *Europa Clipper* – 01 Oct 2018 (C)
50990 Europa Thermal Anomaly Simulation Framework for *Europa Clipper* – 01 Oct 2018 (C)
50989 Thermal Anomaly Detection for Near-Infrared Imaging Spectrometers – 01 Oct 2018 (C)
48583 Automated estimation of volcanic plume heights in satellite imagery using machine learning and computer vision processing – 26 Jan 2012 (C)
48148 Multi-source autonomous response for targeting and monitoring of volcanic activity – 01 Apr 2011 (C)
48123 Autonomous Hyperspectral Data Processing, Product Generation and dissemination for Rapid Response in Volcanic Emergencies – 18 Mar 2011 (C)
47471 Onboard science and applications algorithm for hyperspectral data reduction – 14 Dec 2009 (H)
45998 Web Processing Service (WPS) software framework – 11 Mar 2008 (C)
45445 Volcano Monitor: Autonomous Triggering of *in situ* Sensors on Kilauea volcano, HI, from Eruption Detection by the *EO-1* Spacecraft – 14 Aug 2007 (H)
42523 An Autonomous Earth-Observing Sensor Web – 13 Jul 2005 (C)
41993 The NMP ST-6 Autonomous Sciencecraft Experiment (ASE) - 18 Mar 2005 (C)
30784 Software for the *TechSat-21* Autonomous Sciencecraft Experiment (ASE) – 15 Aug 2002 (C)
30442 Software for Onboard Science Analysis – 16 Nov 2001 (C)
30355 Software for the *Techsat-21* Autonomous Sciencecraft Constellation (ASC) – 20 Aug 2001 (C)
30201 Goal-directed scientific exploration using multiple rovers – 15 Mar 2001 (C)

Other activities: Member, JPL Urban Search and Rescue (USAR) Team, specializing in medical and search and rescue. FEMA certifications in Incident Management IS-100b, IS-200b, IS-700 and IS-800. Promoted to USAR Command Staff, 2018.

Professional service: Chair, Review Panel for NASA ROSES Solar System Workings (the program's first entirely remote panel meeting). Review panels for NASA ROSES Planetary Geology and Geophysics Program. ROSES proposal reviewer: Planetary Geology and Geophysics, Planetary Astronomy, Outer Planets Research Programs, and others. Review of manuscripts for *Icarus*, *Geophysical Research Letters*, *Journal of Geophysical Research*, *Remote Sensing of Environment*, *Journal of Volcanology and Geothermal Research*, and others.

Television work (selection)

- **“Horizon”**. BBC. **“Space Volcanoes”**. Broadcast in the UK in May 2017.
- **“NOVA”**. PBS. **“Finding Life Beyond Earth”**. PBS's *NASA Year of the Solar System* 2-hour special. First broadcast 19 Oct 2011.
- **“Known Universe”**. National Geographic's **“Biggest Cosmic Blasts”**. Broadcast 2 June 2011.
- **“Wonders of the Solar System”**. BBC, episode 4 (UK/US version); episodes 3 and 4 (worldwide version). Broadcast in US August 2010.
- **“95 Worlds and Counting”**. Discovery Channel. Broadcast September 1999.

Available Online

1. Davies, A. G. (2017) Von Karman Lecture at the Jet Propulsion Laboratory, Pasadena, CA, 21 Sept 2017. “A Volcanologist's Paradise – the Study of Volcanic Activity on Io and Earth”. See https://www.jpl.nasa.gov/events/lectures_archive.php?year=2017&month=9

Video of this public lecture is available at:

<https://www.youtube.com/watch?v=gqfpo0mVGTw>

2. Lecture entitled **“Volcanoes Near, Far and Really Far Away”**, given at the Library of Congress, Washington, DC, on 27 October 2010, can be viewed on YouTube at <http://www.youtube.com/watch?v=3GldOHRG9p4>
3. NASA Science – Solar System Exploration – People
Ashley Davies - <https://solarsystem.nasa.gov/people/1260/ashley-davies/>

References

Book

“**Volcanism on Io: a Comparison with Earth**”, A. G. Davies (2007) Cambridge University Press, Planetary Science Series no. 7. 372 pages. Published in paperback July 2014. Available as an ebook, June 2015, through Cambridge University Press.

Refereed Publications

1. Choukroun, M, C. Petuya, T. H. Vu, A. Desmedt, A. G. Davies, C. Sotin (2022) No compelling evidence for substantial incorporation of ammonia in methane clathrate hydrates upon freezing of aqueous solutions, *Chemical Communications*, in press.
2. Davies, A. G. (2022) Cautionary Analysis of Spectral Radiance from Io’s Active Volcanoes Derived from *Galileo* Near-Infrared Mapping Spectrometer Data. *Astro. J.*, 163, 2, 9 pages. <https://doi.org/10.3847/1538-3881/ac3012>.
3. de Kleer, K., M. Skrutskie, J. Leisenring, A. G. Davies, A. Conrad , I. de Pater, A. Resnick, V.P. Bailey , D. Defrère , P. Hinz, A. Skemer, E. Spalding, A. Vaz, C. Veillet and C. E. Woodward (2021) Resolving Io’s Volcanoes from a Mutual Event Observation at the Large Binocular Telescope, *Planetary Science Journal*, 2, 221, 11 pages. <https://doi.org/10.3847/PSJ/ac28fe>
4. de Pater, I, J. T. Keane, K. de Kleer, K. and A. G. Davies (2021) A 2020 Observational Perspective of Io, *Annual Review of Earth and Planetary Sciences*, 49, 633-668. <https://doi.org/10.1146/annurev-earth-082420-095244>
5. Park, R., J. E. Riedel, A. I. Ermakov, J. Roa, J. Castillo-Rogez, A. G. Davies, A. S. McEwen, M. Watkins (2020) Advanced Pointing Imaging Camera (APIC) for Planetary Science and Mission Opportunities. *Planetary and Space Science*, 194, 105095.
6. Petuya, C., Choukroun, M., Vu, T.H., Desmedt, A., Davies, A. G. and Sotin, C. (2020) Cage occupancy of methane clathrate hydrates in the ternary H₂O-NH₃-CH₄ system. *Chemical Communications*, 52, 12391-12394.
7. Petuya, C., M. Choukroun, T. H. Vu, C. Sotin and A. G. Davies (2020) Phase Behavior of Clathrate Hydrates in the Ternary H₂O-NH₃-Cyclopentane System, *ACS Earth and Space Chemistry*. 4(4), 526-534.
8. Mura, A. Adriani, F. Tosi, R. Lopes, G. Sindoni, G. Filacchione, D.A. Williams, A. G. Davies, C. Plainaki, S. Bolton, F. Altieri, A. Cicchetti, D. Grassi, A. Migliorini, M. L. Moriconi, R. Noschese, A. Olivieri, G. Piccioni and R. Sordini (2020) Infrared observations of Io from Juno. *Icarus*, 341, 1 May 2020, 113607.
9. Chien, S., A. G. Davies, J. Doubleday, D. Q. Tran, D. McLaren, W. Chi, A. Maillard (2020) Automated Volcano Monitoring Using Multiple Space and Ground Sensors, *Journal of*

10. de Kleer, K. I. de Pater, E. Molter, E. Banks, A. G. Davies, C. Alvarez. R. Campbell, J. Aycock, J. Pelletier, G. Puniwai, T. Stickel, D. Eugenio, N. M. Nielsen, D. Stern, and J. Tollefson (2019) Io's Volcanic Activity from Time-Domain Adaptive Optics Observations: 2013-2018, *Astron. J.*, **158**, 29, 14 pages.
11. Wagstaff, K L., G. Doran, A. G. Davies, S. Anwar, S. Chakraborty, Marissa Cameron, I. Dunbar and C. Phillips (2019) Enabling Onboard Detection of Events of Scientific Interest for the *Europa Clipper* Spacecraft, Proceedings of the 25th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining, July 2019. Pages 2191–2201. <https://doi.org/10.1145/3292500.3330656>.
Video link: <https://www.youtube.com/watch?v=TdivLDJfL58>
12. Combe, J-P., T. B. McCord, D. L. Matson, T. V. Johnson, A. G. Davies, F. Scipioni and F. Tosi (2018) Nature, distribution and origin of CO₂ on Enceladus, *Icarus*, **317**, 491-508.
13. Magnall, N., M. R. James, H. Tuffen, C. Vye-Brown, C Ian Schipper, J. Castro and A. G. Davies (2018) The origin and evolution of breakouts in a cooling limited rhyolite lava flow, *GSA Bulletin*, doi: <https://doi.org/10.1130/B31931.1>.
14. Cantrall, C., K. de Kleer, I. de Pater, D. A. Williams, A. G. Davies. D. Nelson (2018) Variability and geologic associations of volcanic activity on Io in 2001-2016, *Icarus*, 312, 267-294.
15. Davies, A. G., R. L. Davies, G. J. Veeder, K. de Kleer, I. de Pater, D. L. Matson, T. V. Johnson and L. Wilson (2018) Discovery of a Powerful, Transient, Explosive Thermal Event at Marduk Fluctus, Io, in *Galileo NIMS Data, GRL*, **45**, no. 7, 2926-2933. [10.1002/2018GL077477](https://doi.org/10.1002/2018GL077477).
16. Matson, D. L., A. G. Davies, T. V. Johnson, J-P. Combe, T. B. McCord, J. Radebaugh, S. Singh (2018) Enceladus' near-surface CO₂ gas pockets and surface frost deposits, *Icarus*, 302, 18-26. <https://doi.org/10.1016/j.icarus.2017.10.025>.
17. Davies, A. G., S. Gunapala, A. Soibel, D. Ting, S. Rafol, M. Blackwell, P. O. Hayne, M. Kelly (2017) A novel technology for measuring the eruption temperature of lavas with remote sensing: application to Io and other planets, *JVGR*, 343, 1-16. doi: [10.1016/j.jvolgeores.2017.04.016](https://doi.org/10.1016/j.jvolgeores.2017.04.016).
18. Moussallam, Y., N. Peters, P. Masias, F. Apaza, T. Barnie, C. I. Schipper, A. Curtis, G. Tamburello, A. Aiuppa, P. Bani, G. Giudice, D. C. Pieri, A. G. Davies and C. Oppenheimer (2017) Magmatic gas percolation through the old lava dome of El Misti volcano. *Bull. Volc.*, 79, 46, doi [10.1007/s00445-017-1129-5](https://doi.org/10.1007/s00445-017-1129-5).
19. de Kleer, K, M. Skrutskie, J. Leisening, A. G. Davies, A. Conrad, I. de Pater, A. Resnick, V. Bailey, D. Defrère, P. Hinz, A. Skemer, E. Spalding, A. Vaz, C. Veillet and C.E. Woodward (2017) Multi-phase volcanic resurfacing of Io's Loki Patera, *Nature*, 545, 199-202. doi:[10.1038/nature22339](https://doi.org/10.1038/nature22339).

20. de Pater, I., K. de Kleer, A. G. Davies and M. Ádámkovics (2017) Three Decades of Loki Patera Observations, *Icarus*, 297, 265-281 doi: 10.1016/j.icarus.2017.03.016.
21. Crossfield, I. J. M., D. R. Ciardi, H. Isaacson, A. W. Howard, E. A. Petigura, L. M. Weiss, B. J. Fulton, E. Sinukoff, J. E. Schlieder, D. Mawet, G. Ruane, I. de Pater, K. de Kleer, A. G. Davies, J. L. Christiansen, C. D. Dressing, L. Hirsch, B. Benneke, J. R. Crepp, M. Kosiarek, J. Livingston, E. Gonzales, C. A. Beichman and H. A. Knutson (2017) Two small transiting planets and a possible third body orbiting HD 106315. *Astron. J.*, 153 255 doi:10.3847/1538-3881/aa6e01.
22. Davies, A. G., L. P. Keszthelyi and A. S. McEwen (2016) Determination of Eruption Temperature of Io's Lavas Using Lava Tube Skylights, *Icarus*, 278, 266-278, doi:10.1016/j.icarus.2016.06.003.
23. Davies, A. G., C. Sotin, M. Choukroun, D. L. Matson and T. V. Johnson (2016) Cryolava flow destabilization of crustal methane clathrate hydrate on Titan, *Icarus*, 274, 23-32. doi: 10.1016/j.icarus.2016.02.046.
24. de Pater, I., A. G. Davies, F. Marchis (2016) Keck Observations of Eruptions on Io in 2003 – 2005. *Icarus*, 274, 284-296, doi: 10.1016/j.icarus.2015.12.054.
25. de Pater, I., C. Laver, A. G. Davies, K. de Kleer, D. A. Williams, R. R. Howell, J. A. Rathbun and J. R. Spencer (2016) Io: Eruptions at Pillan, and the Time Evolution of Pele and Pillan from 1996 – 2015, *Icarus*, 264, 198-212. doi 10.1016/j.icarus.2015.09.006.
26. Davies, A. G., G. J. Veeder, D. L. Matson and T. V. Johnson (2015) Map of Io's Volcanic Heat Flow, *Icarus*, 262, 67-78. doi: <http://dx.doi.org/10.1016/j.icarus.2015.08.003>. Note: **Journal cover article**.
27. Davies, A. G., Chien, S., Tran, D. and Doubleday, J. (2016) The NASA Volcano Sensor Web, Advanced Autonomy, and the Remote Sensing of Volcanic Eruptions, Chapter in the Geological Society of London-IAVCEI book “Detecting, Modeling and Responding to Effusive Eruptions”, eds. A. J. L. Harris, T. De Groove, P. Labazuy and S. Carn. P 137-158.
28. Patrick, M., J. Kauahikaua, T. Orr, A. G. Davies, M. Ramsey (2016) Operational thermal remote sensing and lava flow monitoring at the Hawaiian Volcano Observatory, chapter in Geological Society of London-IAVCEI book “Detecting, Modeling and Responding to Effusive Eruptions”, eds. A. J. L. Harris, T. De Groove, P. Labazuy and S. Carn, p 489-504.
29. Harris, A. et al., inc. A. G. Davies (2016) Conclusion: Recommendations and findings of the RED SEED working group, chapter in Geological Society of London-IAVCEI book “Detecting, Modeling and Responding to Effusive Eruptions”, eds. A. J. L. Harris, T. De Groove, P. Labazuy and S. Carn. P 567-596.
30. Harris, A. et al., inc. A. G. Davies (2016) Appendix A2: Collation of hot spot detection algorithms, chapter in Geological Society of London-IAVCEI book “Detecting, Modeling and Responding to Effusive Eruptions”, eds. A. J. L. Harris, T. De Groove, P. Labazuy and S. Carn. P 597-672.

31. Jones, S. M. S. Anderson, A. G. Davies, J. P. Kirby, M. J. Burchell and M. J. Cole (2015) Aerogel Dust Collection for in situ Mass Spectrometry Analysis, *Icarus*, 247, 71-76, doi: 10.1016/j.icarus.2014.09.047.
32. Veeder, G. J., Davies, A. G., Matson, D. L., Johnson, T. V., Williams, D. A. and Radebaugh, J. (2015) Io: Heat Flow from Small Volcanic Features, *Icarus*, 245, 379-410. doi: 10.1016/j.icarus.2014.07.028.
33. Davies, A. G., G. J. Veeder, S. I. Hill, D. L. Matson and T. V. Johnson (2014) Charting thermal emission variability at Amirani with the *Galileo* NIMS Io Thermal Emission Database (NITED), *Icarus*, 241, 190-199. doi: 10.1016/j.icarus.2014.06.034.
34. de Pater, I., Davies, A. G., McGregor, A., Trujillo, C., Ádámkóvics, M., Veeder, G. J., Matson, D. L., Leone G. and the Gemini Io Team (2014) Global Near-IR Maps from Gemini-N and Keck in 2010, with a Special Focus on Janus Patera and Kanehekili Fluctus, *Icarus*, 242, 379-395. doi: 10.1016/j.icarus.2014.06.019.
35. de Pater, I., Davies, A.G., Ádámkóvics, M., Ciardi, D.R (2014) Two New, Rare, High-Effusion Outburst Eruptions at Rarog and Heno Paterae on Io. *Icarus*, 242, 365-378. doi: 10.1016/j.icarus.2014.06.016. **Note: Journal cover article.**
36. de Kleer, K., de Pater, I., Ádámkóvics, M., Davies, A.G. (2014) Near-Infrared Monitoring of Io & Detection of a Violent Outburst Gemini Eruption, *Icarus*, 242, 352-364. doi: 10.1016/j.icarus.2014.06.006.
37. Cataldo, E., A. G. Davies and L. Wilson (2013) Near-vertical supersonic and shock-free gas/magma flow at fissure volcanoes: Application to Pillan, Io. *Icarus*, 226, 1171–1176. doi:10.1016/j.icarus.2013.06.035.
38. Davies, A. G., S. Chien, J. Doubleday, D. Tran, T. Thordarson, M. T. Gudmundsson, Á. Höskuldsson, S. S. Jakobsdóttir, R. Wright and D. Mandl (2013) Observing Iceland's Eyjafjallajökull 2010 Eruptions with the Autonomous NASA Volcano Sensor Web, *JGR-Solid Earth*, 118, 1–21, doi:10.1002/jgrb.50141.
39. Chien, S., D. McLaren, D. Tran, A. G. Davies, J. Doubleday and D. Mandl (2013) Onboard Product Generation on Earth Observing One: A pathfinder for the proposed HypsIRI Mission Intelligent Payload Module. Special Issue on the *Earth Observing One (EO-1)* Satellite Mission: Ten Years in Space, *IEEE JSTARS*, 6, no. 2, 257-264.
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41. Matson, D. L., J. C. Castillo-Rogez, A. G. Davies, T. V. Johnson and J. Lunine (2012) Enceladus: A Hypothesis For Bringing Both Heat And Chemicals To the Surface, *Icarus*, 221, 53-62. doi.org/10.1016/j.icarus.2012.05.031.

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43. Davies, A. G. G. J. Veeder, D. L. Matson and T. V. Johnson (2012) Io: Charting thermal emission variability with the *Galileo* NIMS Io Thermal Emission Database (NITED): Loki Patera, *Geophysical Research Letters*, **39**, L01201, doi:10.1029/2011GL049999.
44. Davies, A. G., L. Keszthelyi and A. S. McEwen (2011) Estimating Eruption Temperature From Thermal Emission Spectra of Lava Fountain Activity in the Erta’Ale (Ethiopia) Volcano Lava Lake – Implications for Observing Io’s Volcanoes, *GRL*, **38**, L21308, doi: 10.1029/2011GL049418.
45. Davies A. G. (2011) Lava lakes on Earth and Io, *Planetary Report*, vol. XXXI, no. 2, 10-15.
46. Davies A. G. and M. E. Ennis (2011) The variability of volcanic activity at Zamama, Culann, and Tupan Patera on Io as seen by the *Galileo* Near Infrared Mapping Spectrometer, *Icarus*, **215**, 401-416.
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Reports (peer-reviewed)

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Steinbrügge, D. J. Stevenson, V. C. Tsai, E. P. Turtle, J. M. Eiler, E. D. Young, K. J. Zahnle, J. F. Adkins, K. E. Mandt, M. A. McGrath, A. Moullet, J. H. Waite, N. M. Schneider (2019) *Tidal Heating: Lessons from Io and the Jovian System*, Final Report for the Keck Institute for Space Studies, 2019. 99 pages.
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141. Williams, D. A. and 23 authors, inc. A. G. Davies (2009) Future Io Exploration for 2013-2022 and beyond, Parts 1 and 2. Planetary Decadal Study Community White Paper, Solar System Exploration Survey, 2013-2022.
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144. Reh, K, *et al.* inc. A. G. Davies (2003) Jupiter Icy Moon Orbiter-Single Launch Option Study Report (NASA Internal Document).
145. Spencer, J. R., J. Rathbun, F. Bagenal, N. Schneider, A. G. Davies, R. Lopes, W. D. Smythe, R. Terrile, R. Howell, Melissa McGrath, F. Herbert, L. Keszthelyi, J. Perry, J. Radebaugh, E. Turtle, M. Milazzo, J. Moses, I. de Pater, J. Schubert, and D. Williams, 2002, “The Future of Io Exploration”, Planetary Decadal Study Community White Paper Solar System Exploration Survey, 2003-2013.
146. Davies A. G., *et al.* (2001) Autonomous Sciencecraft Constellation Science Study Report, available on-line at <http://ASE.jpl.nasa.gov>

IAU telegrams

CBET 3632 - 20130817 (17 Aug 2013). Outburst on Io (actually, two outbursts in the vicinity of Rarog Patera).

IAUC 9259 (3 Sept 2013). A third outburst on Io, this time in the northern hemisphere.

Invited Presentations and Seminars

1. Davies, A. G. (2020) UCLA Meteorite Gallery Series. “Power and Fury: Recent Developments in the Study of Volcanism on Io”. 9 February 2020.
2. Davies, A. G. (2019) Europlanet webinar: broadcast to schools across Europe. Title: “Volcanism on Io – Determining Lava Eruption Temperature to Answer the Biggest Questions in the Wake of the *Galileo* Mission”. 3 June 2019.

3. Davies, A. G. (2017) Von Karman Lecture at the Jet Propulsion Laboratory, Pasadena, CA, 21 Sept 2017. “A Volcanologist’s Paradise – the Study of Volcanic Activity on Io and Earth”.
Video of this lecture is available at: <https://www.youtube.com/watch?v=gqfpo0mVGTw>
4. Davies, A. G. (2017) Public lecture at Pasadena City College, Pasadena, CA, 22 Sept 2017. “A Volcanologist’s Paradise – the Study of Volcanic Activity on Io and Earth”.
5. Davies, A. G. (2017) Observing lava flow emplacement with *EO-1* and the NASA volcano Sensor Web. Workshop on Uncertainty Quantification in Lava Flow Hazard Modelling and Real-Time Source Term Provision, INGV, Catania, Sicily, Italy, 21-24 February 2017.
6. Davies, A. G. (2014) *Earth-Observing 1*, the Volcano Sensor Web, and Observations of Icelandic Eruptions. Presentation to the faculty of the University of Iceland, Reykjavik, Iceland, 19 November 2014.
7. Davies, A. G., L. Keszthelyi, A. S. McEwen (2013) Thermal Remote Sensing of Lava Lakes on Io and Earth, AGU Fall Meeting 2013, San Francisco, CA, Dec 2013, abstract P52A-07.
8. Davies, A. G., C. Sotin, M. Choukroun, D. L. Matson and T. V. Johnson (2013) Evaluating methane clathrate destabilization by heat from lava flows as a mechanism for supplying Titan's atmospheric methane, IAVCEI 2013, Kagoshima, Japan, July 2013, 3K-P1, Abstract 1435-2.
9. Davies, A. G. (2013) The NASA Volcano Sensor Web. Workshop on Satellite-Data-Driven Detection, Tracking and Modelling of Volcanic Hot Spots, Laboratoire Magmas et Volcans, Université Blaise Pascal, Clermont Ferrance, France, 28-30 May 2013.
10. Davies, A. G., G. J. Veeder, D. L. Matson and T. V. Johnson (2012) Charting The Variability of Volcanic Eruptions on Io, invited, AOGS-2012, PS09-A003, Singapore, 17 August 2012.
11. Davies, A. G. University of Edinburgh, Edinburgh, UK. “Volcanism on Io - Massive Lava Flows, Gigantic Lava Lakes, and the Question of Io’s Interior State”. 15 February 2012.
12. Davies, A. G. Lunar and Planetary Institute, Houston, TX. “Active lava lakes as windows into Io’s interior”. 11 November 2011.
13. Davies, A. G. Pomona College, Pomona, CA Geology Department Colloquium. “Lava lakes on Io and Earth – the Key to Unlocking the Secrets of the Jovian System?” 22 March 2011.
14. Davies, A. G. Goddard Space Flight Center, MD. “Lava lakes on Earth and Io – the Key to Understanding the Jovian System?”. 29 October 2010.
15. Davies, A. G. Library of Congress, Washington, DC. “Volcanoes: Near, Far and Really Far Away”, 27 October 2010. Streaming video of this lecture is available at:

Library of Congress http://www.loc.gov/today/cyberlc/feature_wdesc.php?rec=5088

and on YouTube

<http://www.youtube.com/watch?v=3GldOHRG9p4>

16. Davies, A. G. and S. Chien (2010) University of Iceland, Reykjavik. The JPL Volcano Sensor Web and the 2010 Eruption of Eyjafjallajokull. 22 June 2010.
17. Davies, A. G., (2008) Remote Sensing of Volcanic Activity on Io and Earth, and the Derivation of Eruption Style, presentation to the Io Workshop, UC Berkeley, CA, 11 Dec 2008.
18. Davies, A. G., D. L. Matson, J. C. Castillo, T. V. Johnson and C. Sotin (2008) Cryolava Emplacement on Titan and Resulting Morphology: Modelling Strategy. Geophysical Research Abstracts, Vol. 10, EGU2008-A-04430, European Geophysical Union General Assembly, Vienna, Austria, April 2008.
19. Davies, A. G. (2007) IUGG XXXVI General Assembly 2007: Invited presentation to Steering Committee of World Organisation of Volcano Observatories (WOVO) on the Volcano Sensor Web and the 2006 Eruption of Nyamulagira.
20. Davies, A. G., S. Chien, R. Castano, D. Tran and S. Scharenbroich (2006) (Invited) Increasing Mission Science Return Through Use of Spacecraft Autonomy and Sensor Webs: A Volcanology Example, *Eos Trans. AGU* **87** (52), Fall Meet. Suppl., Abstract IN52A-01.
21. Davies, A. G. (2006) Volcanism on Io: thermal modeling of activity at Pillan and Loki Patera, Geology Dept. Lunchtime Seminar Series, UCLA, October 5, 2006.
22. Davies, A. G. (2006) Volcanic Heat and Antarctic Ice: studying high-temperature volcanism on Earth and Io, Earth and Space Sciences Dept. Seminar Series, October 5, 2006.
23. Davies, A. G. (2006) Science 101 Lecture Series, Div. 32, JPL: Volcanic Heat and Antarctic Ice: studying high-temperature volcanism on Io and Earth, June 28, 2006, JPL.
24. Davies, A. G. (2005) Observing volcanic activity with NASA's Autonomous Sciencecraft Experiment. Seminar, New Mexico Institute of Mining and Technology, Socorro, New Mexico, February 2005.
25. Davies, A. G. (2004) Volcanism on Io and Earth. 32-International Geological Congress, Florence, Italy, August 2004. (invited talk).
26. Davies, A. G. (2003) Volcanism on Io. International Astronomical Union Congress 25, Sydney, Australia, July 2003 (invited talk).
27. Davies, A. G. (2003) Episodic volcanism at Prometheus on Io: a comparison with Kilauea, Hawai'i. Hawai'i Institute of Geophysics and Planetology (HIGP), University of Hawai'i, 30 May 2003 (seminar).

28. Davies, A. G. (2003) Modelling IR data of Io's eruptions (invited talk), Workshop on Volcanology on Earth and Io, Center for Integrative Planetary Science (CIPS), University of California, Berkeley, 5 March 2003.
29. Davies, A. G. (2001) Volcanism on Io; quantifying volcanic parameters from *Galileo* data. Seminar at the Center for Integrative Planetary Science (CIPS), University of California, Berkeley, 10 October 2001.
30. Davies, A. G., S. Doute and R. Lopes-Gautier (2000) *Galileo* NIMS observations of Io's surface, IAU XXIV, Manchester, UK, August 2000.
31. Davies, A. G., L.P. Keszthelyi and the *Galileo* NIMS and SSI Teams (1999) *Galileo* observations of Io's volcanism: constraints on lava temperature and eruption style. Abstract, Fall AGU meeting. *EOS Trans.*, **80**, no. 46, F638. (invited talk)
32. Davies, A. G. (1999) Recent observations of Io from the *Galileo* Spacecraft. In "Advances in Planetary Science" Royal Astronomical Society-UK Planetary Forum, London, UK, January 1999. (invited).
33. Davies, A. G. (1998) *Galileo* observations of volcanism on Io. Seminar given at the Lunar and Planetary Institute, Houston, TX, August 1998.
34. Davies, A. G. (1997) Thermal emission from volcanoes: observations and models. "Io during the *Galileo* Era": A Lowell Observatory Conference, p 22-23. (invited).